

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A substantially planar insulating panel comprising:
 - a frame defining a periphery of the panel;
 - 5 a first wall retained by the frame and a second wall opposing the first wall and together with the first wall and the frame defining an enclosed internal space of the panel;
 - at least one intermediate insulating wall disposed in the internal space intermediate the first and second wall members and which creates a first enclosed
 - 10 space in the internal space between the insulating wall and the first wall and a second enclosed space in the internal space between the insulating wall and the second wall, wherein the insulating wall insulates the first wall from the second wall;
 - the frame comprising an extruded profile;
 - 15 the profile having a series of spaced mounting surfaces which receive and retain the walls, the mounting surfaces arranged in a cascading series such that the areas of the walls diminish sequentially in one direction from one side of the panel to the other and the walls are sequentially spaced apart from each other.
- 20 2. A panel according to claim 1 wherein the frame is a unitary structure and wherein the extruded profile of the frame is miter jointed to form a continuous profile having no mechanical start or end point.
3. A panel according to claim 2 wherein the miter joints in the frame are
- 25 welded.
4. A panel according to claim 3 in which the frame profile in section has at least one cavity for the retention of a moisture-absorbent desiccant material.
- 30 5. A panel according to claim 4 in which the cavity is sealed prior to the welding of the frame.

6. A panel according to claim 5 in which the frame profile in elevation has perforations located between the mounting surfaces such that the cavities are in communication with the first and/or second enclosed spaces, such that the perforations allow for the absorption of moisture only from an apposing enclosed space.

7. A panel according to claim 6 in which the frame profile in section has cavities adapted to provide insulation.

8. A panel according to claim 7 in which the walls are affixed to the mounting surfaces using a rigid or semi-rigid adhesive which has either ultraviolet-setting or thermo-setting properties.

9. A panel according to claim 8 in which the mounting surfaces have one or more recesses which act as traps for any excess adhesive used in affixing the walls.

10. A panel according to claim 9 in which the first and/or second enclosed spaces are sealed and filled with air, argon gas, foam or another insulating material.

11. A panel according to claim 10 in which the frame includes a gasket-retaining groove adapted to retain a magnetized flexible sealing gasket which provides an airtight seal between the panel and an article to which the panel is fitted.

12. A panel according to claim 11 in which the frame profile includes a keyway for insertion and mounting of a hinge.

13. A panel according to any one of the preceding claims in which the frame is formed from a thermal plastics material.

14. A panel according to claim 13 in which the walls are of glass or thermal plastics panes.

15. A method for constructing a substantially planar insulating panel including a frame in which is disposed two walls defining an internal space; the internal space including at least one internal insulating wall which insulates the two outer walls thereby reducing or eliminating condensation on the outer walls of the frame; the method comprising the steps of:

- (a) providing two walls of a predetermined size;
- (b) providing an insulating wall member;
- (c) constructing a frame having a series of spaced mounting surfaces which receive and retain the walls, the mounting surfaces arranged in a cascading series such that the areas of the walls diminish sequentially in one direction from one side of the panel to the other and the walls are sequentially spaced apart from each other.
- (d) fitting the first wall to an inner mounting surface of the frame;
- (e) fitting the insulating member to a second mounting surface on the frame in a central position relative to the outside surfaces of the frame; and
- (f) fitting the second wall to a third mounting surface of the frame such that the walls are in opposing relationship and define the internal space housing the insulating member.

16. A method according to claim 15 comprising the further step of placing the insulating wall member at an optimum spacing and equidistant from the first and second walls.